

OPERATION MANUAL

Voyager®

OBSERVATION SYSTEM

VOM-78T

with tilt camera control



VOM-78T Features:

- Dual Camera input
- Tilt camera control
- Brightness / Contrast / Volume Day-night Adjustment Control
- Audio output
- Automatic Trigger Operation (Standby-On, Camera Switching)
- Illuminated Front Panel
- Mirror / Normal selectable

ASA

AUDIOVOX SPECIALIZED APPLICATIONS, L.L.C.

www.asaelectronics.com

VOM-78T OPERATIONS MANUAL

IMPORTANT:

The VOYAGER Observation System has been designed to provide years of trouble-free operation.

Please read this manual throughly. This manual contains instructions to ease installation of the camera and monitor.

The VOYAGER Observation System is a supplement to standard rearview mirror systems, and will provide additional rearview vision when installed and maintained properly.

The VOYAGER Observation System is not intended in any way to be a substitute for careful, cautious, defensive driving or for the consistent adherence to all applicable traffic laws and motor safety regulations. This product is not intended to be a substitute for rearview mirrors or for any other motor vehicle or boat equipment mandated by laws.

FEATURES:

VOM-78T Monochrome 7" Monitor

- Day / night switch
- Brightness and contrast controls
- Volume control.
- Power / stand-by switch
- Audio / video input and Audio output
- Tilt up / down switch

CONTENTS OF VOM-78T 7" Monochrome Monitor

- 1- 7" monitor
- 1- Snap-on sun visor
- 1- Monitor bracket
- 1- Power harness with locking connector
- 1- Range markers
- 4- Thumb screws (M5 x 15) with plain washer & spring washers
- 4- Attachment screws with washers(M5 X 12)
- 1- 6 inches adaptor cable for non-tilt camera use into CA1 input terminal

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VEC-65 Cable

1- 65ft cable with waterproof connector. (Not supplied)

VCT-655 Cable

1- 65ft cable with waterproof connector for tilt camera. (Not supplied)

Documents:

1- Operations manual

BEFORE INSTALLATION:

1. This system operates from 10 volts DC to 32 volts DC , negative ground.
2. Please install this system according to the instructions in this manual.
3. **DO NOT DISASSEMBLE THE CAMERA OR THE MONITOR.**
Disassembling the camera will compromise the waterproof seal and this voids the Warranty.
4. Connect the system to a switched ignition power source. Connection to a non-switched battery power source will reduce battery life.

**** WARNING****

1. To prevent electrical shock, **DO NOT OPEN THE MONITOR CASE.** *There are potentially lethal voltages inside the monitor,* there are no serviceable parts inside, if evidence of tampering is detected, the warranty will be considered void.
2. Keep monitor away from leaking water, rain, moisture etc. It is not waterproof. Any moisture inside the monitor could cause extensive damage.

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INSTALLATION INSTRUCTIONS

VOM-78T MONITOR

1. Attach monitor inside vehicle in a location convenient to the driver (e.g. Center of dash, overhead or in dash).
Do not impede the operator's view of any vehicle controls or the view outside the vehicle.
2. Use a compression plate to attach the monitor bracket to the dash or overhead (See Fig.1).
3. Adjust mounting angle of the monitor to allow driver to easily view the screen from all seat position (See Fig.2).
4. If necessary, snap sun visor into groove on front face of monitor. Press all (4) sides of the visor to snap it into place.

VEC-65 & VCT-655 CABLE (Not supplied)

1. The camera-to-cable connection is waterproof. The cable-to-monitor connection is not waterproof.
Be sure to orient the cable properly. The cylindrical end attaches to the camera. The rectangular box end attaches to the monitor.(See Fig.3)
2. Do not run the VEC-65 & VCT-655 cable over sharp edges. Do not kink the cable.
Keep the cable away from hot and rotating parts.
3. Place all excess cable in convoluted tubing.
4. Tie the cable securely.

MAINTENANCE:

Remove dust and dirt with a damp soft cloth. Heavier dirt should be removed with a damp soft cloth and mild detergent. Do not use strong cleaning agents containing gasoline, thinner, benzene or alcohol. These substances may damage the exterior surface of the monitor.

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**** CAUTION ****

1. Before drilling, be sure no cable or wiring is on the other side. Be sure to drill a 3/4" diameter hole only.
2. Feed as much cable as possible into vehicle and clamp securely. This reduces the possibility of being hooked during production.
3. Keep all cables away from HOT, ROTATING and ELECTRICALLY NOISY components.
4. To increase protection of cable, place all excess wire and extension cable in convoluted tubing.
5. Do not twist camera cable and do not cut camera pigtail or cable.

WIRING MONITOR

1. See wiring diagram for connections to ignition ground and back-up circuit.(See Fig.3)
2. Wiring Monitor:
 - Insert extension cable into camera #1 position if (2) camera are used , be sure to mark each extension cable properly and plug second cable into camera #2 position.
 - Bundle excess cable together using a cable tie or vinyl tape. This will avoid possible damage to cable during operation.(See Fig.3)
3. The red wire is connected to an ignition power source, the black wire is connected to chassis ground, and the blue wire is connected to the vehicle's back up circuit.(See Fig.3)

VOM-78T OPERATIONS MANUAL

FUNCTIONS AND OPERATION

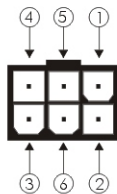
Front of Monitor : See FIGURE 4

1. Power switch : STD. BY- Monitor operates when vehicle transmission is switched into "REVERSE" ON - monitor and system operate when ignition switch is "ON"
2. CA1/CA2 switch : "CA1" used mainly for rear mounted camera or as specified by the installer.
"CA2" used mainly for side or mirror mounted camera or as specified by the installer.
3. Tilt up/ down switch : Vertical angle or view adjusted into Up and Down positions.
4. Day/ Night switch : Pre-set brightness and contrast levels optimized for day or night operation.
5. Contrast : Variable control of contrast. Should be adjusted if the "DAY/ NIGHT" switch does not achieve the most desirable picture.
6. Brightness : Variable control of brightness. Should be adjusted if the "DAY/ NIGHT" switch does not achieve the most desirable picture.
7. Volume : Variable control of internal speaker volume.

FUNCTIONS AND OPERATION CONTINUED

Rear of monitor : See FIGURE 4

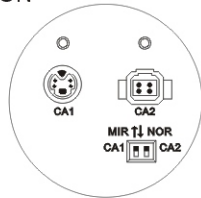
8. POWER CONNECTION :



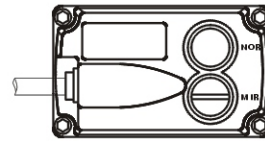
Pin No.	Description
1	N/C
2	Power (DC 10V or 32V)
3	Ground
4	N/C
5	Trigger In (DC 12V or 24V)
6	N/C

VOM-78T OPERATIONS MANUAL

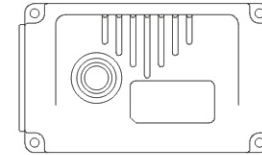
9. MIR/NOR OPTION



Monitor switch position in "MIR" position



Voyager camera switch (magnet) in "MIR" position



Voyager Tilt camera (VBCT-130)

- This combination will result in an inverted (mirrored) image that is correct for rear (back-up) camera use.
- If the opposite image is required for applications other than rear (back-up) camera use, either the monitor or the camera switch should be set to the "NOR" position.
- In case VBCT-130, Tilt camera applied to CA1 position, MIR / NOR option can be selected only by the CA1 dip switch
- Make sure that monitor/camera switch settings are correct for your particular application.

10. AUDIO JACK

- Connects audio connector to an (optional) external speaker.

11. CA1/CA2 INPUTS JACKS

- In single camera applications the camera should be connected to CA1 Monitor Input.
- A Rear/Back-up Camera should be connected to CA1 Monitor Input in any application.

Reverse trigger Feature

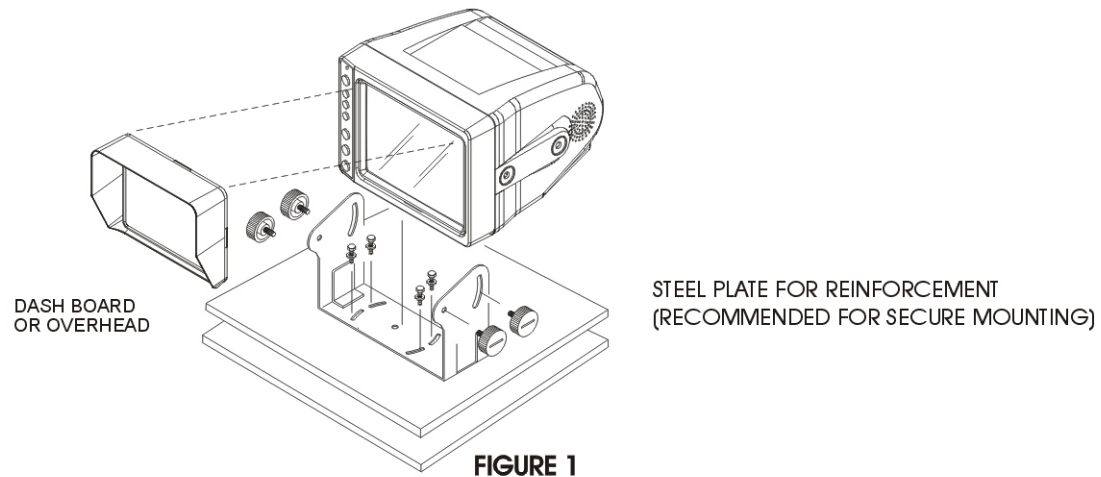
Applying +12 Volts to Blue/Reverse Trigger lead serves two functions:

- 1) Monitor comes ON from Stand-by mode and switches to CA1 input.
- 2) Monitor Input will switch from CA2 to CA1 while +12 Volts is applied.

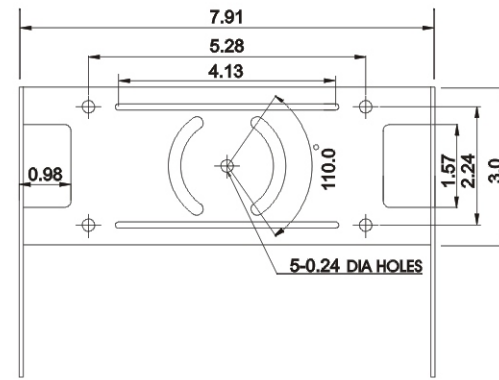
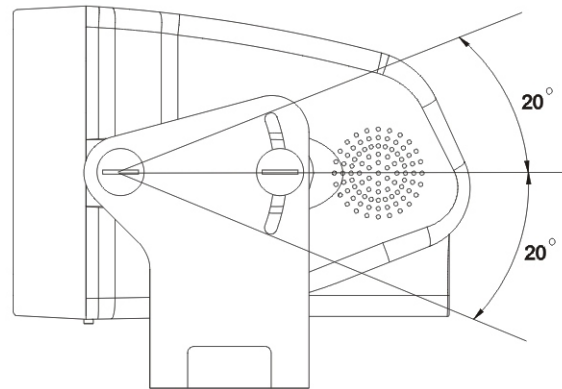
VOM-78T OPERATIONS MANUAL

AFFIXING DISTANCE MARKERS TO THE MONITOR SCREEN

1. Clean monitor screen surface of fingerprints. Place distance indicators behind the vehicle at (3) feet, (5) feet and (9) feet along the width of the vehicle.
These distances are measured from the rear bumper.(Refer to fig. 5)
2. Attach the markers to the monitor screen over the images of the distance indicators.
These markers represent distances of (3) feet, (6) feet and (9) feet from the back of the vehicle (See fig.5)
3. Affix the "STOP" marker on the monitor screen over the image of the rear bumper to locate the rear bumper.
4. The monitor screen is now "calibrated" for distances behind the vehicle of (3) feet, (6) feet and (9) feet.



VOM-78T OPERATIONS MANUAL



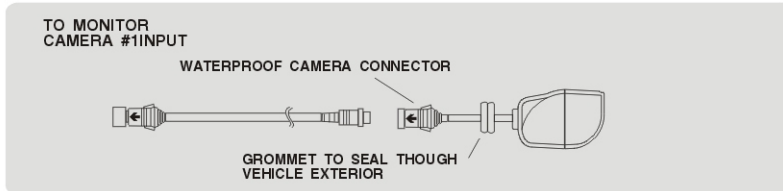
Unit : Inch

MONITOR MOUNTING HOLE PATTERN

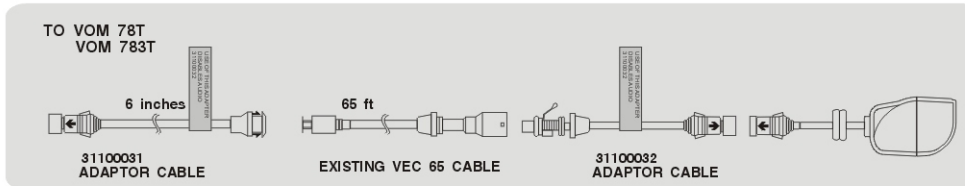
FIGURE 2

VOM-78T OPERATIONS MANUAL

* For Tilt Camera Installation in the CA1 Postion

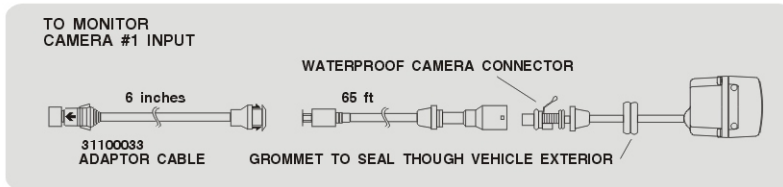


* For Tilt Camera / Monitor Installation with existing VEC65 cable installed



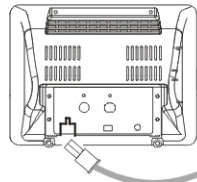
note :
The audio line will
be used as the camera
tilt line resulting in
no Audio

* For Non Tilt Camera Installation in the CA1 Postion

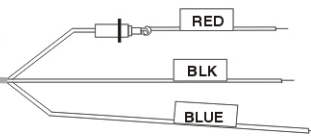


VOM-78T OPERATIONS MANUAL

REAR OF MONITOR



TO MONITOR

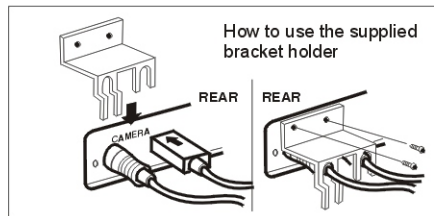


RED (To Power
DC 10V or 32V)

BLK (Ground)

BLUE (Reverse Trigger)

CONNECTIONS



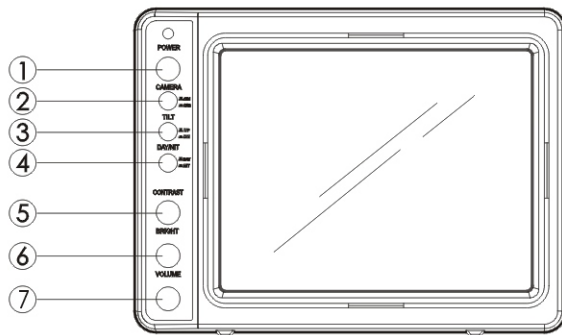
Caution

- Before making the connections, disconnect the ground terminal of the car battery to avoid short circuiting.
- The plugs should be fully inserted into the connectors or jacks. A loose connection may cause the unit to malfunction.

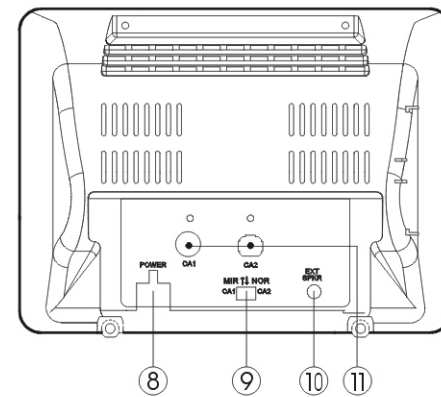
FIGURE 3

VOM-78T OPERATIONS MANUAL

- MONITOR FRONT VIEW -



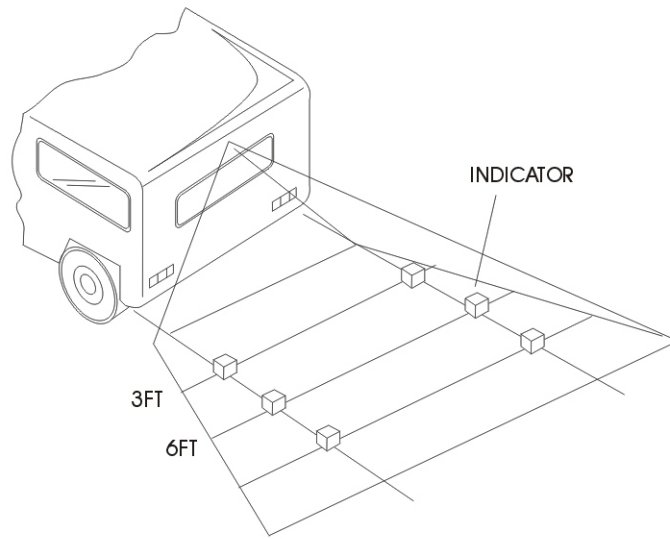
- MONITOR BACK VIEW -



MONITOR OPERATING CONTROLS AND CONNECTIONS

FIGURE 4

VOM-78T OPERATIONS MANUAL

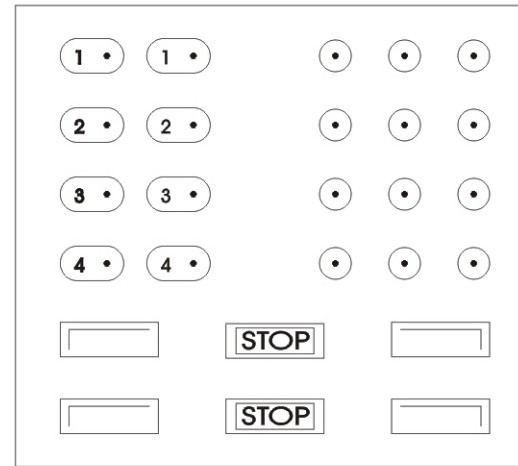


3FT

6FT

INDICATOR

WIDTH OF VEHICLE



MARKERS EXAMPLE

FIGURE 5

VOM-78T OPERATIONS MANUAL

Operation Manual

SPECIFICATIONS:

System	Rated voltage	12 volt DC, negative ground
	Operating voltage	10 to 32 volt DC
	Current consumption	2.5 amperes
VOM-78T monitor	TV system	EIA
	Picture tube	Black and White 7 inch picture measured diagonally 90° degree deflection angle
	Picture image	Factory preset to reverse image
	Picture resolution	600 TV lines
	Power connector	Red : Positive input (10V to 32V) Blue : Reverse gear input (12V or 24V) Black : Ground
	Inputs	4-pin mini jack 1) Video input : 1.0V p-p Sync. Negative 2) 12V Tilt control power (CA1 only) 3) Audio input 4) 12V, 0.2A DC (output) 5) Shield Ground
	Power requirements	10V to 32V DC
	Power consumption	20W Maximum
	Operating Temperature Range	-15°C to + 50°C (+5°F to +122°F)
	Storage Temperature Range	-25°C to + 85°C (-13°F to +185°F)

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Dimensions	200(W) X 152(H) X 220(D) mm 7.9(W) X 6.0(H) X 8.7(D) Inch Including projecting parts and controls
Weight Approx.	2.5Kg / 5 lbs Including mounting bracket
Accessories Supplied:	A - Mounting bracket 1EA Mounting bolts 4EA Machine screws 4EA Tapping screws 4EA Spring washers 4EA Flat washers (12X5) 4EA Flat washers (20X5) 4EA B - Cable bracket 1EA Machine screws 2EA C - Handle screws 4EA D - Sun visor 1EA
Power cable	5 ft
Adaptor cable	6"

DISCLAIMER: The use of the VOYAGER Observation system does not guarantee or promise that the user will not be in an accident or otherwise not collide with an object.

The VOYAGER Observation system is not intended in any way to be a substitute for careful and cautious driving or for the consistent adherence to all applicable traffic laws and motor safety regulations.

This product is not intended to be a substitute for rearview mirrors or for any other motor vehicle or boat equipment mandated by law.

* Design And Specifications Are Subject To Change Without Notice.

WARRANTY

90 DAY / 12 MONTH LIMITED WARRANTY

AUDIOVOX SPECIALIZED APPLICATION, LLC (the Company) warrants to the original retail purchaser of this product that should this product or any part thereof, under normal use and conditions, be proven defective in material or workmanship within 90 days from the date of original purchase, such defect(s) will be repaired or replaced (at the Company's option) without charge for parts and repair labor. After the initial 90 day period and for a period of 12 months from the date of original purchase, the Company will supply at no charge a replacement for any defective part(s).

To obtain repair or replacement within the terms of this warranty, the end user should contact the O.E.M. The product is to be delivered to the OEM or original place of purchase, with proof of warranty coverage (e.g. dated bill of sale, and serial number of the unit, and vin#), specification of defect(s), transportation prepaid, to an approved warranty station.

This warranty does not extend to the elimination of externally generated static or noise, to the correction of antenna problems, to costs incurred for removal or reinstallation of the product, or to any damage to any tapes, speakers, accessories, or electrical systems.

This warranty does not apply to any product or part thereof which, in the opinion of the Company, has been damaged through alteration, improper installation, mishandling, misuse, neglect, accident, **THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE, AND, IN NO EVENT, SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER FOR THE PRODUCT.**

This warranty is in lieu of all other express warranties or liabilities. **ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY MUST BE BROUGHT WITHIN A PERIOD OF 30 DAYS FROM THE DATE OF ORIGINAL PURCHASE. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHATSOEVER.** No person or representative is authorized to assume for the Company any liability other than that expressed herein in connection with the sale of this product.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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